REMARKS

I. Status of the Claims

Claims 1 to 3, 5 to 46 were pending for purposes of this Office Action, as claim 4 was previously cancelled via a Preliminary Amendment dated March 9, 2006. Claims 5, 12 and 29 have been cancelled by way of the present amendment. Claim 1 has been amended to incorporate the limitations of claims 5, 12 and 29 as previously presented in the preliminary amendment dated March 9, 2006. Support for the amendment to claim 1 can also be found in the specification of the present invention, for example, page 15, line 29 to page 16, line 1; and Stage1 and Stage 2 Examples found on pages 49 and 50 of the specification as filed (International Publication No. WO 2005/025540). Claim 6 has been amended to provide for proper dependency. Claim 43 was amended to correct a minor typographical error.

Claims 1-3, 6-11, 13-28 and 30 to 46 remain pending.

Applicant respectfully submits that no new matter has been added by virtue of this amendment.

Reconsideration is respectfully requested.

II. Claim Rejections- 35 U.S.C. § 112

Claims 1 to 3 and 9-46:

In the current Office Action, claims 1 to 3 and 9-46 were rejected under 35 U.S.C. 112, first paragraph, stating that "the specification, while being enabling for compositions and methods utilizing specific mucoactive agents such as gluycosaminoglycans, does not reasonably provide enablement for methods and compositions comprising any possible mucoactive agent whatsoever."

Applicant respectfully submits that independent claim 1 has been amended to recite in relevant part: "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans and an amino acid." Therefore amended claim 1 now recites a composition comprising one or more mucoactive agents , wherein the "composition comprises one or more glycosaminoglycans and an amino acid." As admitted in the Office Action the present specification is "enabling for compositions and methods utilizing specific mucoactive agents such as gluycosaminoglycans." Claims 12 and 29 have been cancelled by way of the present amendment, therefore, the rejections to claims 12 and 29 are now moot. Claims 2-3, 9-11, 13-28 and 30 to 46 either directly or indirectly depend from claim 1.

For the foregoing reasons, Applicants submit that claims 1-3, 9-11, 13-28 and 30 to 46 are enabled by the present specification and respectfully request withdrawal of the rejection under 35 U.S.C. § 112, first paragraph.

Claims 26 and 29:

In the current Office Action, claims 26 and 29 were rejected under 35 U.S.C. 112, first paragraph, stating that "the specification, while being enabling for methods and compositions for treating specific pulmonary diseases such as asthma or chronic obstructive pulmonary disease, does not reasonably provide enablement for compositions and methods for treating any and all pulmonary diseases."

Applicant respectfully submits that independent claim 1 has been amended to recite in relevant part: "a method of treating a pulmonary disease comprising the administration of a therapeutically effective amount of a pharmaceutical composition to a subject in need of such treatment, wherein the pulmonary disease has as a symptom the excess formation of mucus secretions in the airways, said pulmonary disease is selected

from the group consisting of chronic bronchitis, acute asthma, cystic fibrosis, chronic obstructive pulmonary disease and bronchiectasis." Therefore amended claim 1 now recites a method of treating a pulmonary disease, wherein the "wherein the pulmonary disease has as a symptom the excess formation of mucus secretions in the airways, said pulmonary disease is selected from the group consisting of chronic bronchitis, acute asthma, cystic fibrosis, chronic obstructive pulmonary disease and bronchiectasis." As admitted in the Office Action the present specification is "enabling for methods and compositions for treating specific pulmonary diseases such as asthma or chronic obstructive pulmonary disease." Claim 29 has been cancelled by way of the present amendment, therefore, the rejection to claim 29 is now moot. Claim 26 indirectly depends from claim 1.

For the foregoing reasons, Applicants submit that claim 26 is enabled by the present specification and respectfully request withdrawal of the rejection under 35 U.S.C. § 112, first paragraph.

III. Claim Rejections- 35 U.S.C. § 102

In the current Office Action, claims 1-3, 5-10, 15, and 25 to 29 were rejected under 35 U.S.C. § 102(b) as being anticipated by Ahmed et al. (PCT International Publication No. WO99/06025).

The Ahmed et al. reference discloses heparin and ultra low molecular weight heparin (ULMWH) or other sulfated polysaccharides having average molecular weights of about 1,000-3,000 daltons for the treatment of late phase allergic reactions, airway hyperresponsiveness or and inflammatory reactions/diseases. See Ahmed, abstract.

Claim 1 of the present invention as currently amended recites: "A method of treating a pulmonary disease comprising the administration of a therapeutically effective amount of a pharmaceutical composition to a subject in need of such treatment, wherein the pulmonary disease has as a symptom the excess formation of mucus secretions in the airways, said pulmonary disease is selected from the group consisting of chronic

bronchitis, acute asthma, cystic fibrosis, chronic obstructive pulmonary disease and bronchiectasis, said composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans and an amino acid."

Applicant respectfully submits that Ahmed does not show or teach a composition which includes amino acids. The Ahmed reference does not teach the inclusion of amino acids in a heparin formulation. Thus, Ahmed et al. does not disclose a "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans **and an amino acid**" as recited in claim 1 of the present invention (emphasis added).

For the foregoing reasons, Applicants submit that the Ahmed et al. reference does not anticipate independent claim 1 of the present invention. Claims 5 and 29 have been cancelled by way of the present amendment, therefore, the rejection to claims 5 and 29 are now moot. Claims 2-3, 6-10, 15, and 25 to 28 either directly or indirectly depends from claim 1. In view of the foregoing Applicant respectfully requests withdrawal of the rejections to claims 1-3, 6-10, 15, and 25 to 28 under 35 U.S.C. § 102(b) as being anticipated by Ahmed et al. (PCT International Publication No. WO99/06025).

III. Claim Rejections- 35 U.S.C. § 103

Claims 12, 14, 16-24, 30 and 40-46

In the current Office Action, claims 12, 14, 16-24, 30 and 40-46 were rejected under 35 U.S.C. § 103(a) as being obvious over Ahmed et al. (PCT International Publication No. WO99/06025) as applied to claims 1-3, 5-10, 15 and 25-29, and further in view of Staniforth

(PCT International Publication WO97/03649).

Claim 12 has been cancelled by way of the present amendment, therefore, the rejection to claim 12 is now moot.

The Ahmed et al. reference is discussed above.

The Staniforth reference describes a powder for use in a dry powder inhaler comprising active material and additive material; the additive material comprising an anti-adherent material and the powder includes at least 60% by weight of active materials. See Staniforth, Abstract.

Claim 1 of the present invention as currently amended recites: A method of treating a pulmonary disease comprising the administration of a therapeutically effective amount of a pharmaceutical composition to a subject in need of such treatment, wherein the pulmonary disease has as a symptom the excess formation of mucus secretions in the airways, said pulmonary disease is selected from the group consisting of chronic bronchitis, acute asthma, cystic fibrosis, chronic obstructive pulmonary disease and bronchiectasis, said composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans and an amino acid.

Applicant respectfully submits that neither Ahmed et al. reference nor the Staniforth reference disclose a "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans and an amino acid" as recited in claim 1 of the present invention. Specifically, neither Ahmed et al nor Staniforth teach or suggest a combination of glycosaminoglycans and an amino acid as active agents.

As discussed above, the Ahmed et al. reference discloses heparin and ultra low molecular weight heparin (ULMWH) or other sulfated polysaccharides having average molecular weights of about 1,000-3,000 daltons for the treatment of late phase allergic reactions, airway hyperresponsiveness or and inflammatory reactions/diseases. See Ahmed, abstract. Applicant respectfully submits that Ahmed does not show or teach a composition which includes amino acids. The Ahmed reference does not teach the inclusion of amino acids in a heparin formulation. Thus, Ahmed et al. does not show or teach a "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans **and an amino acid**" as recited in claim 1 of the present invention (emphasis added). Moreover, Ahmed et al. does not provide a reason, teaching or suggestion for a person of ordinary skill in the art to adapt or modify the heparin composition disclosed therein by combining heparin with an amino acid. The Staniforth reference cited in the Office Action does not cure this deficiency of the Ahmed et al. reference. Specifically, although Staniforth discloses that an amino acid, e.g. leucine , may be used as an anti-adherent additive material, Staniforth does not disclose that an amino acid may be used in a composition as an "mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus" as recited in claim 1 of the present invention. See Staniforth, page 5, lines 32 to 37. Staniforth discloses the use of heparin as an active agent but does not disclose an amino acid as an active agent.

For the foregoing reasons, Applicants submit that the combination of the Ahmed et al. reference and the Staniforth reference does not render claim 1 of the present invention obvious. Claim 12 has been cancelled by way of the present amendment, therefore, the rejection to claim 12 is now moot. Claims 14, 16-24, 30 and 40-46 either directly or indirectly depends from claim 1. In view of the foregoing, Applicant respectfully requests withdrawal of the rejections to claims 14, 16-24, 30 and 40-46 under 35 U.S.C. § 103(a) as being obvious over Ahmed et al. (PCT International Publication No. WO99/06025) and further in view of Staniforth (PCT International Publication WO97/03649).

Claims 31-34

In the current Office Action, claims 31-34 were rejected under 35 U.S.C. § 103(a) as being obvious over Ahmed et al. (PCT International Publication No. WO99/06025) in view of Staniforth (PCT International Publication WO97/03649) as applied to claims 12, 14, 16-24, 30 and 40-46, and further in view of Dunbar et al.

The Ahmed et al. reference and the Staniforth reference are discussed above.

The Dunbar reference relates to the evaluation of a plain-jet atomizer and ultrasound nebulizer for use in a spray drying tower for the production of respirable dry particles. See Dunbar, page 440, first paragraph under "Conclusion" heading. Thus, Dunbar concerns the analysis of the production of spray-dried particles.

Claims 31 to 34 depend from claim 30 which recites "a method of producing particles for use in a composition as claimed in claim 1, the method comprising spray drying the one or more mucoactive agents in a spray drier."

As discussed above, neither the Ahmed et al. reference nor the Staniforth reference teach or show a method of treating a pulmonary disease comprising administering a "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans and an amino acid" as recited in claim 1 of the present invention. Although, Dunbar relates to the evaluation of a plain-jet atomizer and ultrasound nebulizer for use in a spray drying tower for the production of respirable dry particles, Dunbar does not teach or suggest a method of treating a pulmonary disease comprising administering a "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one

or more glycosaminoglycans and an amino acid" and therefore Dunbar does not cure the defect of either the Ahmed reference or the Staniforth reference. (emphasis added)

For the foregoing reasons, Applicants submit that the combination of the Ahmed et al., Staniforth and Dunbar references does not render claims 31 to 34 of the present invention obvious. In view of the foregoing, Applicant respectfully requests withdrawal of the rejections to claims 31 to 34 under 35 U.S.C. § 103(a) as being obvious over Ahmed et al. (PCT International Publication No. WO99/06025) in view of Staniforth (PCT International Publication WO97/03649) as applied to claims 12, 14, 16-24, 30 and 40-46, and further in view of Dunbar et al.

Claims 11 and 35-39

In the current Office Action, claims 11 and 35-39 were rejected under 35 U.S.C. § 103(a) as being obvious over Ahmed et al. (PCT International Publication No. WO99/06025) in view of Staniforth (PCT International Publication WO97/03649) as applied to claims 12, 14, 16-24, 30 and 40-46, and further in view of Chickering et al. (US2004/0121003).

The Ahmed et al. reference and the Staniforth reference are discussed above with respect to claim 1. Claim 11 depends directly from claim 1. Claim 35 recites "A method of producing particles for use in a composition as claimed in claim 1, the method comprising the step of jet milling particles of the one or more mucoactive agents in the presence of an element selected from the group consisting of: air, a compressible gas, and a fluid." Claims 36 to 39 depend directly from claim 35.

The Chickering et al. reference relates to a method for making a dry powder blend comprising jet milling particles of a pharmaceutical formulation to deagglomerate at least a portion of the microparticles which may have agglomerated while substantially maintaining the size and morphology of the individual microparticles. See Chickering et al., abstract.

As discussed above, neither the Ahmed et al. reference nor the Staniforth reference teach or show a method of treating a pulmonary disease comprising administering a "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans and an amino acid" as recited in claim 1 of the present invention (emphasis added). Although, Chickering relates to a method for making a dry powder blend comprising jet milling particles of a pharmaceutical formulation to deagglomerate at least a portion of the microparticles which may have agglomerated while substantially maintaining the size and morphology of the individual microparticles, Chickering does not teach or suggest a method of producing particles for use in treating pulmonary disease comprising a "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans and an amino acid" as recited in claim 1 of the present invention and therefore Chickering does not cure the defect of either the Ahmed reference or the Staniforth reference. (emphasis added)

For the foregoing reasons, Applicants submit that the combination of the Ahmed et al., Staniforth and Chickering references does not render claims 11 and 35-39 of the present invention obvious. In view of the foregoing, Applicant respectfully requests withdrawal of the rejections to claims 11 and 35-39 under 35 U.S.C. § 103(a) as being obvious over Ahmed et al. (PCT International Publication No. WO99/06025) in view of Staniforth (PCT International Publication WO97/03649) as applied to claims 12, 14, 16-24, 30 and 40-46, and further in view of Chickering et al. (US2004/0121003).

Claim 13

In the current Office Action, claim 13 was rejected under 35 U.S.C. § 103(a) as being obvious over Ahmed et al. (PCT International Publication No. WO99/06025) and further in view of Stossel et al. (U.S. Patent 5,464,817).

The Ahmed et al. reference is discussed above in relation to claim 1 of the present invention. Claim 13 depends directly from claim 1.

Stossel is directed to methods of promoting respiratory tract flow by administering actin-binding proteins. See Stossel, col. 1, lines 18 to 26.

As discussed above with respect to claim 1 of the present invention, Ahmed et al. does not show or teach a "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises **one or more glycosaminoglycans and an amino acid**" as recited in claim 1 of the present invention (emphasis added).

Although Stossel is directed to methods of promoting respiratory tract flow by administering actin-binding proteins, Stossel does not show or teach "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans and an amino acid" and therefore Stossel does not cure the defect of the Ahmed reference. (emphasis added)

For the foregoing reasons, Applicants submit that the combination of the Ahmed et al. reference and Stossel et al. (U.S. Patent 5,464,817) reference does not render claim 13 of the present invention obvious. In view of the foregoing, Applicant respectfully requests withdrawal of the rejections to claim 13 under 35 U.S.C. § 103(a) as being obvious over Ahmed et al. (PCT International Publication No. (WO99/06025) in view of Stossel et al. (U.S. Patent 5,464,817).

Claim 11

In the current Office Action, claim 11 was rejected under 35 U.S.C. § 103(a) as being

obvious over Ahmed et al. (PCT International Publication No. WO99/06025) and further in view of Trofast et al. (U.S. Patent 6,027,714).

The Ahmed et al. reference is discussed above in relation to claim 1 of the present invention. Claim 11 depends directly from claim 1.

Trofast describes a dry powder composition comprising budesonide and a carrier substance for use as a treatment of respiratory disorders. See Trofast, col. 1, lines 23 to 27.

As discussed above with respect to claim 1 of the present invention, Ahmed et al. does not show or teach a "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises **one or more glycosaminoglycans and an amino acid**" as recited in claim 1 of the present invention (emphasis added).

Although Trofast describes a dry powder composition comprising budesonide and a carrier substance for use as a treatment of respiratory disorders, Trofast does not show or teach a "composition comprising one or more mucoactive agents which assist mucous clearance through one or more of the following mechanisms: reducing cross-linking within the mucus, diluting the mucus, and digesting naked DNA and cell debris within the mucus, wherein the composition comprises one or more glycosaminoglycans and an amino acid" as recited in claim 1 of the present invention and therefore Trofast does not cure the defect of the Ahmed reference. (emphasis added).

For the foregoing reasons, Applicants submit that the combination of the Ahmed et al. reference and Trofast et al. (U.S. Patent 6,027,714) reference does not render claim 11 of the present invention obvious. In view of the foregoing, Applicant respectfully requests withdrawal of the rejections to claim 11 under 35 U.S.C. § 103(a) as being obvious over Ahmed et al. (PCT International Publication No. (WO99/06025) in view of Trofast et al. (U.S. Patent 6,027,714).

CONCLUSION

Reconsideration of the present application, as amended, is requested. The Examiner is respectfully requested to telephone Applicant's undersigned attorney in order to resolve any outstanding issues and advance the prosecution of the case to allowance.

An early and favorable action on the merits is earnestly solicited.

Respectfully submitted,
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